Promoting the Behaviorological Analysis of Verbal Behavior

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An important contribution of radical behavioral science is its analysis of verbal behavior. Slowly but surely an increasing number of efforts verify the propositions explicit or inherent in Skinner's theory of verbal behavior, or apply his analysis to clinical or educational practice. But both the theory and the effort to apply it are met with silence. Such silent neglect simply varies the calumnious attention usually given to behavioristic science. In recent years several papers have called attention to how non-behaviorists have habitually misrepresented the science of behavior and its underlying philosophy of radical behaviorism (Cooke, 1984; DellaLana, 1982; Morris, 1985; Todd, 1987a; Todd & Morris, 1981; Todd & Morris, 1983). These authors offer various solutions. Their preferred strategy stresses an increased effort to disseminate accurate information about behavioristic science to the press and to the world at large. They generally address, however, errors of commission, not omission. Further, their solutions tend to dwell on "processes" instead of "products." This paper first reviews the problem of misrepresentation of the science. It then addresses the principal error of omission in the psychological literature, and offers a solution based on achieving new products resulting from new verbal behavior technology.

In his analysis of verbal behavior under the control of verbal stimuli, a relation he denotes as "intraverbal behavior," Vargas (1986) states,

> *Verbal Behavior* was published in 1957 after Skinner worked twenty-five years on it. Prior versions were presented as the William James Lectures and for a language course at Columbia. Reactions seemed favorable though perhaps puzzled. Then a great silence ensued, broken only by Chomsky's (1959) bombastic review which when not missing the point misunderstood the analysis. Thereafter it appeared to be the book's fate to be trotted out and roundly scolded when any of a variety of those of the psycholinguistic or cognitive persuasion wanted to show the inadequacy if not sheer ineptness of a behavioral analysis of language. The only attention obtained was of an honor so fashioned that it would have been best to have foregone it (p. 128).

Both that silence and that honor persist. It appears to be the worst of all possible worlds for the book and its theoretical analysis of verbal behavior in the general intellectual and professional community outside the behavioristic one. Even here, the attention extended to Skinner's analysis of verbal behavior often consists of no more than a reference salute to the title of the book. (Note Vicki Lee's, 1981, discussion of the teaching of language in applied behavioral work.) The problem of such isolation and rejection constitutes part of the larger difficulty of the acceptability of behavioristic science. Both problems are briefly described before considering what steps have been taken and should be taken in order to best deal with them.

ERRORS OF COMMISSION AND OMISSION

Errors of Commission

The errors of commission take several forms. One finds *incorrect* statements such as those that identify a behaviorological analysis as "S-R psychology." For example, Weinstein and Mayer (1986), in the *Handbook of Research on Teaching* assert that, "The behaviorist (or S-R) approach to learning—as developed from the work of Hull and Spence and Skinner—focuses on how the interpretation of material influences behavior" (p. 316). Or, take the more insidious, and common, type of criticism typically found in

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introductory educational psychology texts such as, *Applied Psychology for Teachers*. Its author, Becker (1986, p. 42) states, "Shaping is a terribly inefficient process compared with prompting. If the teacher had to shape every new response, the children would end up pretty dumb." Besides being wrong in its portrayal of how a behaviorological instruction technology would operate, such statements perpetuate an erroneous stereotype of a "mechanistic analysis" that deals with an "empty organism," that is, one with no history and completely passive.

Other statements are *inaccurate*. That is, they hold some veridicality, perhaps, even to some behaviorists. These inaccurate statements tend to result from "superficial behavior analysis," as Michael (1980) puts it. He gives as an example of an inaccurate statement the assertion that the increase in studying that precedes the taking of an exam results in a scalloping pattern because of a fixed-interval schedule of reinforcement. On other occasions, carelessness blends with criticism. In an article on computer-assisted instruction, Hirschbuhl (1983) gives B. F. Skinner some credit as an originator of the field, but does so in a rather odd way by calling attention to the "disastrous experiments with teaching machines, programmed textbooks and the like" (p. 21). Hirschbuhl further qualifies this credit when he asserts that (p. 22) "due attention was paid to the findings of B. F. Skinner (almost exclusively based on the behavior of rats in *puzzle boxes*)." (Emphasis added.) On occasion, even behaviorists commit these inaccuracies (Lee, 1987). They frequently occur in writings by non-behaviorists.

The third type of erroneous statements about a behavioristic analysis are those best described as *indisposed*. (The word is used in its older meaning of "unsympathetic" and "hostile.") From them, we can infer a degree of distaste on the writer's part, along with a tendency to punish. These emotion-laden errors combine misrepresentations with inaccuracies, and often add a hint of hostility as well. For example, in discussing computer-assisted instruction, Rigney and Munro (1981) claim that ". . . psychologists fled the austere bastions of behaviorism, abandoning its fetish of the empty organism. . ." (p. 132). One encounters other examples of combined indispositions and misrepresentations when reading about how behaviorism represents a kind of fascism, or how behaviorists are "mind controllers." Such statements are often presented in the guise of objective commentary. Consider an introductory textbook by Reilly and Lewis (1983) that states "some critics have reacted so strongly to Skinner's writings they have seen him as advocating something truly evil, as somehow leading to the totalitarian state." Sometimes the denigration of behaviorism and the manipulation of readers goes to extraordinary extremes. DellaLana (1982), for example, reported on one textbook that had line drawings of famous psychologists: The image of Skinner was harsh, the mouth in a scowl and the eyes blank discs, whereas other psychologists such as Carl Rogers were depicted with smiles and warm expressions, and their eyes had pupils! These emotion-laden statements present an unrelenting and unflattering image of the science and its practitioners to thousands of undergraduates, lay persons, and professionals in other disciplines. As with all attempts to punish, one suspects that the intent of those is to put a scientific endeavor out of business.

The incorrect statements, inaccurate statements, and indisposed statements are what can be called "errors of commission." They are easily identified. They appear frequently in the psychological and educational literature. They represent the various "straw man" versions of behaviorism that non-behaviorists construct, then often incinerate with inflammatory words.

Errors of Omission: Verbal Behavior

Perhaps a more artful error with respect to the science of behavior has to do with what is *not said* about it and *not referenced* from it by non-behaviorists. Indeed, to anyone familiar with effective propaganda techniques, this omission can be more damaging in some respects than errors deliberately made. The lack of reference to certain topics implies that behaviorists have nothing to say or contribute to those topics. Hoch (1987) points out that the American Educational Research Association's third edition of the 1037 page *Handbook of Research on Teaching* (Wittrock, 1986)

> presents reviews of the most current research on such topics as "Quantita-

> tive methods in research on teaching," "Teacher behavior and student achievement," "Teaching functions," "Classroom organization and management," "The cultures of teaching," "Research on teaching in higher education," and others. In the index of this handbook, three behaviorists are listed: B. F. Skinner is cited 3 times (the longest passage mentioning Skinner is 2 sentences), F. S. Keller is mentioned 3 times (all references to PSI, and all fewer than one paragraph long), and K. S. Lashley is cited...
>
> In the remainder of this 1037 page handbook, there are 5 citations to "behavioral psychology" (one of them is to cognitive-behavioral psychology), 1 citation to computer assisted instruction (which may or may not respect behavior analytic principles), and 1 citation to programmed instruction. No references are made to precision teaching and none to single subject research methods (pp. 4-5).

What little behavioristic science the student encounters amidst the numerous erroneous statements, often reduces to little more than "behavior-mod;" useful, perhaps, for learning how to keep students in their seats. The student of psychology or educational psychology comes away with not only a distorted picture of behaviorological science, but one grossly incomplete as well.

How non-behaviorists deal with the behaviorological analysis of verbal behavior exemplifies this error of omission. It is as if such an analysis did not exist. In such cases, all of the "higher order" behaviors such as various kinds of verbal behavior—thinking, problem-solving, creating, and so on—appear to fall within the exclusive provinces of developmental and cognitive psychology.

A review of any selected number of introductory psychology and educational psychology texts reveals a strikingly similar pattern in the treatment of verbal behavior. The first commonalty is that the behaviorist position on verbal behavior is almost never mentioned, and Skinner's book *Verbal Behavior* is almost never listed in the references. The reader can reach in her or his bookshelf for one of these texts, open it, and easily observe proof of this assertion. A second commonalty occurs with the arrangement of the chapters. A chapter on "learning" or "conditioning" turns up in most of the texts. The errors and inaccuracies aside, this chapter usually describes respondent conditioning, operant conditioning, delves briefly into the four basic schedules of reinforcement, discusses a few related topics such as shaping or punishment, shows a picture of a rat in a "Skinner box," and in the interests of scientific balance, almost inevitably offers a section on "criticisms of the behavioral approach." Often, the next chapter covers verbal learning, memory, language, and cognition. An educational psychology text by Royer and Feldman (1984) provides a quintessential example of this pattern. It titles the behavioral chapter "Operant Approaches to Instruction: Classroom Management," whereas the next chapter on language and cognition is entitled "Cognitive Approaches to Instruction: Developing Understanding." The obvious conclusions from such a pattern of omitting the behaviorological contributions in the area of verbal behavior are: first, behaviorists appear to have nothing to contribute to the subjects of verbal behavior, language, and verbal learning; second, although behaviorists understand, to some degree, infrahuman behavior, they use what they know to control people—"managing" them.

The omission of *Verbal Behavior* is not restricted to introductory textbooks in psychology and education. It is omitted almost entirely from the principal psychology journal dealing with the subject matter of verbal behavior, the *Journal of Verbal Learning and Verbal Behavior.* As Table 1 attests, during the 24 years during which the journal was titled *Journal of Verbal Learning and Verbal Behavior,* only 5 published papers out of 1,839 referenced *Verbal Behavior,* and one of those did so incorrectly! Quite clearly, mainstream psychology did not consider the analysis contained in *Verbal Behavior* as significant.

Why is the omission of verbal behavior important? Verbal behavior stands out as one of the most common kinds of behavior in which human beings engage. Radical behaviorists, starting with Skinner's (1957) analysis of verbal behavior, have had a fair amount to say about the subject, and recently the quantity of research on verbal behavior has been accelerating. An accurate

Table 1.
Tally of the number of papers published, and the number of references to publications by B.F. Skinner (including *Verbal Behavior*), and the number of references to publications by Noam Chomsky, in the *Journal of Verbal Learning and Verbal Behavior*. Note that out of the 1,839 papers published in the journal, there were only five references to Skinner's book *Verbal Behavior*, which amounts to 0.27% of the papers.

YEAR	NUMBER OF PAPERS PUBLISHED	NUMBER OF SKINNER REFERENCES	NUMBER OF CHOMSKY REFERENCES
1962	34	2 (1 to *VB*)	0
1963	100	0	5
1964	74	2	2
1965	82	2	13
1966	93	4 (1 to *VB*)	9
1967	164	0	14
1968	205	1	12
1969	132	0	16
1970	104	0	15
1971	94	0	12
1972	99	1 (1 to *VB*)*	15
1973	73	0	12
1974	66	0	7
1975	58	0	7
1976	60	0	5
1977	53	1 (1 to *VB*)	3
1978	49	1 (1 to *VB*)	3
1979	51	0	4
1980	52	0	2
1981	48	0	3
1982	51	0	2
1983	46	0	1
1984	48	0	5
1985 Journal changed its name to the *"Jounal of Memory and Language"*			

*Author referenced "Skinner, B.F. *Verbal Learning*. New York: Appleton-Century-Cofts, 1957." Note error in title.

account of the science of behavior recognizes the contributions that behaviorists have made to the analysis of verbal behavior. Students, and professionals in other disciplines, deserve to be told about those contributions, and to be exposed to the growing body of literature about verbal behavior. Currently, this is not likely outside of those few places where behaviorologically-oriented instructors teach the Skinnerian analysis. If such instruction is to happen in more places, then we must initiate strategies that insure such an outcome. We must gain acknowledgement of what behaviorists have said about verbal behavior, and gain more than just a passing dismissal in introductory textbooks.

STRATEGIC COURSES OF ACTION

At best, we can only speculate why *Verbal Behavior*, and the ensuing work based upon it, has been ignored. Perhaps such disregard relates to the paucity of empirical research, from the 1960's to the mid 1970's, on the propositional statements of Skinner's theory of verbal behavior. In any event, the historical record clearly demonstrates the ignoring of the radical behavioral analysis of verbal behavior. How can behaviorologists reverse the dearth of attention given to their analysis of verbal behavior? Several strategies present themselves for review. They are not mutually exclusive—behaviorologists can work on more than one at a time.

A Reactive Strategy: Protesting Improprieties by Letter

A first strategy would be "reactive," as suggested by Morris (1985). Behaviorologists

1. Todd's letter and Gould and Marler's answer stand as a good example of what occurs even when the facts are unambiguous, and the letter writer attempts to correct the misstatement in a proper way. Todd's letter addressed the main thesis of Gould and Marler's article: that behaviorists have ignored (or downplayed, if not outright rejected) the role phylogenetic factors play in "learning." But Gould and Marler (1987) did more than create a false antithesis between behaviorology and ethology. They served up the usual platter of false facts and half truths. Among the statements they made:

> In operant conditioning. . . animals learn a behavior pattern as the result of *trial-and-error* experimentation *they undertake* in *order to obtain a reward* or avoid a punishment (p. 75). (Errors are italicized. Note the number in one sentence.)
>
> Rats readily learn to press a bar for food, but they cannot learn to press a bar in order to avoid an electric shock (p. 75). (An assertion that would surprise Sidman, 1966, and others who have worked on avoidance conditioning.)
>
> . . . imagining a solution before exploring it physically is a behavior outside the two traditional forms of learning originally studied by behaviorists (p. 83). (Gould and Marler state that one of these "traditional forms" is operant conditioning. The quote illustrates the ignorance of behaviorological work on verbal behavior.)

Scientific American is read by thousands of lay persons at home, adopted by thousands of teachers for classroom use, and referred to by thousands of professionals in other disciplines.

One last point: the authors know of several letters sent to the editors of *Scientific American* that pointed out the inaccuracies described above, and others, in Gould and Marler's article. The writers received form letters from the editors of *Scientific American* that thanked those writers for their concerns.

would write letters to textbook authors and publishers that point out both overt and covert sins of omission and commission with respect to verbal behavior. The writing of letters constitutes a worthwhile task, but only if they do not sound shrill, demanding, or threatening. Even then, the letters may not change the behavior of the article or textbook authors and publishers. Note Gould and Marler's (1987) response to Todd's (1987b) letter.[1] It could be argued, however, that those letters would at least expose the uninformed, misinformed, and disinformed, to the behavioristic position.

The real question turns on the cost-effectiveness of the reactive approach. There are many textbooks on the market, with many new ones coming out each year. Dozens of journals and hundreds of articles beg to be read. A thorough letter-writing campaign could easily consume the valuable, but limited resources of time and energy. In short, it could become a full time job in and of itself. And for what results?

At the most optimistic, only a small percent of the authors and publishers would adjust their texts to conform to the behaviorological position. The response cost of shrugging off such letters and filing them in the trash can is much lower than re-working the texts. Moreover, the textbook authors may honestly feel they were thorough in their research and punctilious in their assessment. Thus, they may resent any suggestion that their research and integrity were less than complete. And some authors might have had such a long history of negative verbal behavior about behaviorism that no volume of letters or appeals to reason could ever hope to overturn their convictions. A letter to such a person, no matter how well-conceived and politely worded, could have an effect opposite to that intended. But these caveats are not meant to suggest we abandon the letter-writing campaigns. Rather, they suggest that additional strategies supplement the reactive ones.

A Proactive Strategy: Advertising the Research Accelerations

As mentioned before, the volume of verbal behavior research grows. Skinner's original analysis is slowly being modified and extended. Thus, a second strategy for getting professionals in other disciplines to acknowledge the behaviorological analysis of verbal behavior depends on the accelerating amount of verbal behavior research being conducted and published. The amount of verbal behavior research, including both conceptual and empirical papers that cite and use *Verbal Behavior,* is growing by a celeration factor of times 1.75 (or nearly doubling) articles published every five years—as Figure 1 demonstrates. If such a celeration trend continues, there will be about 70 papers published per year by the year 2000. With reference to the treatment of behavioral work on verbal behavior, what would happen if we accelerated the pace even more? If within a few years the yearly output of verbal behavior papers exceeded, say, 100 articles per year it probably would become more difficult for nonbehaviorists to discount the behavioral position as easily as they discount it now. The sheer growth in the volume of the work would produce some degree of desired effect on the writings of non-behaviorists. As the quantity of verbal behavior research increases, such progress should be noted and disseminated to non-behavioral textbook writers and publishers. At the very least, such data will buttress any other claims that behaviorologists make.

If there is any flaw to the second strategy, it lies in the fact that like the first strategy it is "process" oriented. We would be focusing on how we labored, and not on the products of the labor. A harsh reality is that hard data seldom convince most people of much of anything. Cognitivists provide reams of hard data on their position, and we still do not buy their interpretation. Dismissal of behavioristic work would continue in its easy fashion for the non-behaviorist. The research might be more voluminous, but it would be in journals that non-behaviorists do not read anyway. A change in the second strategy by attempting to publish in non-behavioral journals would not work either. The very reason for the existence of most behavioral journals has to do with the difficulties that behaviorists faced in getting their articles published in mainstream psychology journals in the first place.

But the second strategy qualifies as more of a "proactive" measure, going by the terms that Morris (1985) suggests. Non-behaviorists do need to be made aware of advances both in the quantity of verbal behavior

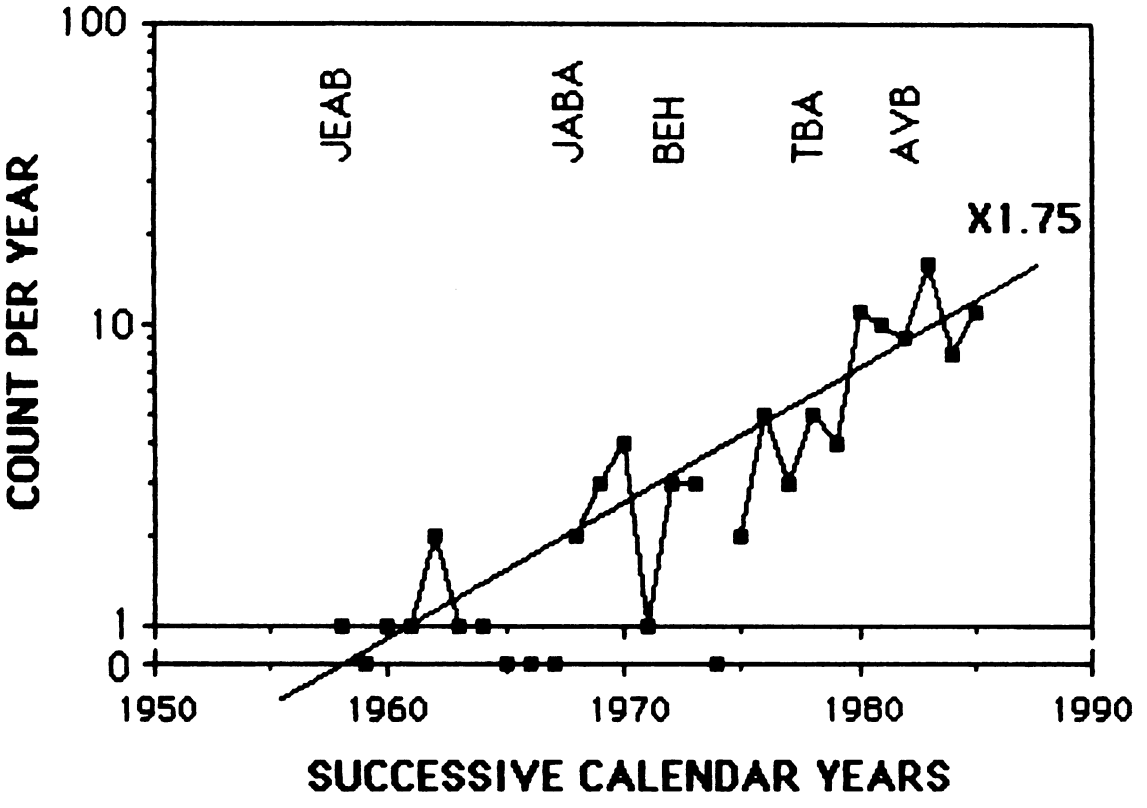

Fig. 1. Papers about verbal behavior that also cite Skinner's book *Verbal Behavior.* Empirical and conceptual papers in the *Journal of the Experimental Analysis of Behavior (JEAB), the Journal of Applied Behavior Analysis (JABA), Behaviorism (BEH), The Behavior Analyst (TBA),* and the *Analysis of Verbal Behavior (AVB).* Note that the line of best fit drawn is an approximation of the actual celeration line.

research, and in the extensions to Skinner's analysis that necessarily result. They need such awareness on a regular basis. The public relations office of the Association for Behavior Analysis could attend to this task. Opportunities for the office abound. Recently, the Dallas Morning News (6-1-87) published an article in its science section that pertained to how children learned a lesson. Needless to say, the cognitivist views of Noam Chomsky received much coverage, while the work of B. F. Skinner was dismissed in a sentence about "pigeons pushing a *lever* for food" (emphasis added). This illustrates a perfect example of a situation where the ABA public relations office could raise a concern over the obvious inaccuracies and omissions with respect to the behaviorological position, and also could take the opportunity to educate the newspaper writer and editors about the growth and viability of verbal behavior research.

A Product Success Strategy: Expediting Verbal Behavior Technology

The "reactive" and "proactive" strategies discussed thus far will probably not change much in how verbal behavior research by behaviorists is presented in non-behavioral sources. Such strategies are necessary and worth while endeavors, but insufficient.

A third strategy extends a suggestion made by Sulzer-Azaroff (1985). She notes that a diverse array of behavioral technologies exist for producing high levels of skilled academic performance, and that successes resulting from application of these methods "need to be communicated to educators, the public at large, and public policy makers" (Sulzer-Azaroff, 1985, p. 31).[2] Again recalling the dictum that "process does not sell, but product does" (Lindsley, 1980, and also recom-

2. A policy followed in act as well as suggested—see the national Sunday supplement, *Parade Magazine,* August 3, 1987, p. 15.

mended by various discussants in the ABA Newsletter—such as, for example, in the 1987 Fall issue), we should change the focus of our efforts from extolling our superior science to promoting its superior products, including its use in settings such as the home (Ledoux, 1987). One source of superior products would be that resulting from a technology derived from the analysis of verbal behavior.

The most immediately obvious arena for such products lies in education. Most of what we learn in schools from day-care centers to kindergarten through graduate school is verbal behavior. Much shaping, refining, and extending of verbal repertoires takes place in educational institutions. Teaching is the arranging of conditions under which behavior changes. In schools and colleges, it is primarily verbal repertoires that get changed—at least that is the goal.

Within the past decade the state of American education has become the subject of national concern, and rightly so. In its 1983 report, *A Nation at Risk*, the National Commission on Excellence in Education noted the decayed state of our educational system, and called attention to the inferior verbal skills of students graduating from such a system. The report recommended solutions along the lines of doing to a greater degree what is done already, from lengthening the school day to teaching teachers more on what they are to teach. But as Skinner (1984) reminds us, the one major item overlooked in the report was the teaching process itself. The Commission stood silent on that issue. A teaching technology derived from the analysis of verbal behavior would go a long way toward solving the problem of how to improve American education.

Such a technology would be superior to that de facto technology of nostrums and enthusiasms that presently exists. A behaviorologic technology founded on the analysis of verbal behavior would be one that explicitly attempts to shape and to refine various extraverbal, intraverbal, autoverbal and other multiply controlled verbal repertoires.[3] We would expect that a behaviorological technology based on the analysis of verbal behavior would lead inevitably to students having verbal repertoires far superior to those which they would have had under the older system. This is not an unrealistic expectation: When behavioral technology in general—as differentiated from that suggested here which would be specifically derived from *Verbal Behavior*—is applied in educational settings, the result has been students with superior repertoires of verbal and nonverbal skills (such as obtained by, for example, the New Century Learning Centers [Weinstock, 1984]).

The third strategy of developing a verbal behavior technology is not as easily overlooked or ignored as the first two. Social forces will lend themselves to the delivery of such a technology (Snider, 1987). Parents want their children to have the "best" education possible. They often attempt to locate in districts with "good" schools. If that is not feasible, and if they have the financial resources available, they send their children to private academies. Presented with an effective verbal behavior technology as a viable alternative to pedagogical techniques of less success, members of a community would begin to demand the installment of such technology in their schools.

The third strategy includes two major tactical components. They would work in tandem. Both require an explicit and close connection to the science. Eventually, they would require the proper professional infrastructure for their success.

The first component pertains to the development of the verbal behavior technology itself. This development would proceed in conjunction with the expanding field of verbal behavior research. Discovering how best to teach a tact repertoire, for example, covers issues in both the basic and applied domains. Such discoveries imply that virtually any verbal behavior research will not be too distant from application even if it is basic research (note Lee & Pegler's analysis of spelling ,1982), and that any work in verbal behavior carries implications for basic research even if applied in a client or student setting (Layng & Andronnis, 1984; J. Vargas, 1978).

The second component of this third strategy involves transfer of the verbal

3. The verbal behavior categories follow the slight modifying of Skinner's categories proposed by Vargas (1986). The primary difference is the renaming of the category called by Skinner (1957), "verbal behavior under the control of verbal stimuli." Vargas calls it "intraverbal behavior," and denotes the three main types of intraverbal behavior as "duplic," "codic," and "sequelic" verbal behavior. "Duplic," and "codic" were adopted from Michael (1982).

behavior technology to the educational market place. Good ideas are worthless if they sit gathering dust on a bookshelf. As verbal behavior technology develops, efforts need to be taken to get it adopted into various educational institutions. At this point, the aims should probably be kept small: Try to incorporate the technology into a school or college that needs a change in a specific and special-purpose operation, for example, a remedial lab or a special education class. The ground breaking work done by Greer (in press), Spradlin (1963), and Sundberg (1987) are exemplary. The technology would have to be adopted in toto, as well. It must not be diluted at this stage in the transfer process so that it begins to lose it effectiveness (Pennypacker, 1986).

As important, the technology should not lose its behavioristic character. More explicitly, as practitioners of a behaviorological technology, we should not disguise its origins. Not only does such disavowal impart an apologetic air to our professional activities which then denigrates those activities (along with us), but it also reinforces any tendency, on that part of a verbal community that is hostile, to continue punitive actions. At worst, others in the community join in on the condemnations—believing the arguments they make against a behaviorological technology without knowing why they make them. At best, the rest of the community remains ignorant as to where credit should accrue, with consequent effect on delivery of resources for professional work by behaviorologists. Such selling out in order to buy in, leaves everyone holding the bag; including, eventually, the community we try to help.

Once the technology and its dissemination begin to develop, any resulting improvement in the verbal skills of the recipients should become both noticeable and noteworthy. If other school systems and educational institutions desire to copy the success in their own establishments, then at that point it should be made clear what the technology is, and from what science it derives. With success of verbal behavior technology, the dearth of attention, and the deadly misattention previously given it and its parent science should change. For, from the point of view of the culture at large, the important issue revolves around developing a teaching technology that holds a real possibility of solving the current (and continuing) crises in education. The point underscored here is that the portrayal of behaviorology must connect with the development of a verbal behavior technology that will help the culture in the long run.

A NEW DIRECTION

The issue of the treatment of behaviorology, and how this affects the promotion of our analysis of verbal behavior, relates to the issue of whether the discipline becomes part of the field of psychology. Most psychologists do not treat behavior analysis and its evolved outcome, behaviorology, with benign neglect, but rather take quite a hostile posture to it. They will be the very people who will remain unswayed by the reactive measures of a letter writing campaign or by the proactive publicity about verbal behavior research issued from a public relations office of ABA. Moreover, they may not sit back and watch the activist research of the third strategy unfold. They did not with Keller's build-up of a radical behavioristic program at Columbia (Keller, 1986).

The cognitive majority within psychology ought never to be charged with naivete or irrationality with respect to their position on behaviorism and behaviorology. Give them credit for being able to figure out what is taking place in their midst. Few of them would stay oblivious to an infiltration of radical behaviorists. Since cognitive psychologists control many of the resources that fuel psychology, we must not put ourselves, and continue to put ourselves, in a position of depending on their "good will." We do, after all, know a little about contingencies, and what these imply with respect to "will."

Moving into psychology (an inappropriate and unacceptable move for behavioristic professionals who never were there in the first place), or attempting to change it from the inside (a half-century failed strategy by the radical behaviorists who happen to be psychologists) continue bankrupt efforts. Neither strategy will change the field of psychology (Epstein, 1987; Vargas, 1987), nor change the way that psychology authors portray behaviorologists and their discipline. A clear separation from psychology will place radical behaviorists under contingencies to find independent resources from which to

operate and to survive. Independency of resources denotes independency of discipline. Such disciplinary status for behaviorology implies a number of outcomes. One of those involves the impact of behaviorological verbal behavior research on other fields.

Education is not the only arena in which behaviorologists can formulate and facilitate a behaviorological technology based on verbal behavior. By establishing their own discipline, behaviorologists will enhance their commerce with a spectrum of fields in the behavioral engineering business. Fields such as advertising, business administration, public relations, law, and others (see Fraley, 1987, for a more complete listing) that deal with human behavior, *especially verbal behavior.* Here then, to borrow Pennypacker's words (1986), lies a "golden opportunity" for behaviorologists to develop other kinds of verbal behavior technologies. By seeking out, and offering service and help to these other disciplines, behaviorologists forge changes in sectors of the culture as important as education; sectors where they have not yet been misrepresented and discounted. In fact, they get a fresh start.

By developing effective verbal behavior technologies in these other disciplines, two futures result. The first would be growing recognition of the significance of Skinner's behaviorological analysis of verbal behavior. The second would be accelerating the emergence of behaviorology as a profession in its own right. Such outcomes would no longer necessitate reactive and proactive campaigns; only the happy necessity of helping to solve the conundrums posed by the complexity of verbal behavior.

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